

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: 10/526,125  
Source: 1FwP  
Date Processed by STIC: 8/14/06

***ENTERED***

## **CRF Errors Edited by the STIC Systems Branch**

Serial Number: 10/526,125

CRF Edit Date: 8/14/06  
Edited by: An

— Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

— Corrected the SEQ ID NO. Sequence numbers edited were:

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— Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

---

— Deleted: \_\_\_ invalid beginning/end-of-file text ; \_\_\_ page numbers

— Inserted mandatory headings/numeric identifiers, specifically:

---

— Moved responses to same line as heading/numeric identifier, specifically:

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*J*  
Other:  
deleted multiple <110>'s  

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IFWP

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/526,125

DATE: 08/14/2006

TIME: 15:41:59

Input Set : N:\AMC\Sequence listing.txt  
 Output Set: N:\CRF4\08142006\J526125.raw

3 <110> APPLICANT: CHIRON SRL  
 4 PIZZA Mariagrazia  
 5 MASIGNANI Vega  
 7 <120> TITLE OF INVENTION: MUTANT FORMS OF MENINGOCOCCAL ADP-RIBOSYLATING TOXIN  
 9 <130> FILE REFERENCE: P031668WO / PP19813.002  
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/526,125  
 C--> 11 <141> CURRENT FILING DATE: 2005-02-28  
 11 <150> PRIOR APPLICATION NUMBER: GB-0220205.9  
 12 <151> PRIOR FILING DATE: 2002-08-30  
 14 <160> NUMBER OF SEQ ID NOS: 13  
 16 <170> SOFTWARE: SeqWin99, version 1.02  
 18 <210> SEQ ID NO: 1  
 19 <211> LENGTH: 145  
 20 <212> TYPE: PRT  
 21 <213> ORGANISM: Neisseria meningitidis  
 23 <400> SEQUENCE: 1  
 24 Met Gly Asn Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp Glu Gln  
 25 1 5 10 15  
 27 Asn Asn Gly Gln Leu Lys Pro Lys Gly Asn Lys Ala Glu Val Ala Ile  
 28 20 25 30  
 30 Arg Tyr Asp Gly Lys Phe Lys Tyr Asp Gly Lys Ala Thr His Gly Pro  
 31 35 40 45  
 33 Ser Val Lys Asn Ala Val Tyr Ala His Gln Ile Glu Thr Gly Leu Tyr  
 34 50 55 60  
 36 Asp Gly Cys Tyr Ile Ser Thr Thr Asp Lys Glu Ile Ala Lys Lys  
 37 65 70 75 80  
 39 Phe Ala Thr Ser Ser Gly Ile Glu Asn Gly Tyr Ile Tyr Val Leu Asn  
 40 85 90 95  
 42 Arg Asp Leu Phe Gly Gln Tyr Ser Ile Phe Glu Tyr Glu Val Glu His  
 43 100 105 110  
 45 Pro Glu Asn Pro Asn Glu Lys Glu Val Thr Ile Arg Ala Glu Asp Cys  
 46 115 120 125  
 48 Gly Cys Ile Pro Glu Glu Val Ile Ile Ala Lys Glu Leu Ile Glu Ile  
 49 130 135 140  
 51 Asn  
 52 145  
 55 <210> SEQ ID NO: 2  
 56 <211> LENGTH: 145  
 57 <212> TYPE: PRT  
 58 <213> ORGANISM: Neisseria meningitidis  
 60 <400> SEQUENCE: 2  
 61 Met Gly Asn Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp Glu Gln  
 62 1 5 10 15

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/526,125

DATE: 08/14/2006

TIME: 15:41:59

Input Set : N:\AMC\Sequence listing.txt

Output Set: N:\CRF4\08142006\J526125.raw

64 Asn Asn Gly Gln Leu Lys Pro Lys Gly Asn Lys Ala Glu Val Ala Ile  
 65 20 25 30  
 67 Arg Tyr Asp Gly Lys Phe Lys Tyr Asp Gly Lys Ala Thr His Gly Pro  
 68 35 40 45  
 70 Ser Val Lys Asn Ala Val Tyr Ala His Gln Ile Glu Thr Gly Leu Tyr  
 71 50 55 60  
 73 Asp Gly Cys Tyr Ile Ser Thr Thr Asp Lys Glu Ile Ala Lys Lys  
 74 65 70 75 80  
 76 Phe Ala Thr Ser Ser Gly Ile Glu Asn Gly Tyr Ile Tyr Val Leu Asn  
 77 85 90 95  
 79 Arg Asp Leu Phe Gly Gln Tyr Ser Ile Phe Glu Tyr Asp Val Glu His  
 80 100 105 110  
 82 Pro Glu Asn Pro Asn Glu Lys Glu Val Thr Ile Arg Ala Glu Asp Cys  
 83 115 120 125  
 85 Gly Cys Ile Pro Glu Glu Val Ile Ile Ala Lys Glu Leu Ile Glu Ile  
 86 130 135 140  
 88 Asn  
 89 145  
 92 <210> SEQ ID NO: 3  
 93 <211> LENGTH: 145  
 94 <212> TYPE: PRT  
 95 <213> ORGANISM: Neisseria meningitidis  
 97 <400> SEQUENCE: 3  
 98 Met Gly Asn Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp Glu Gln  
 99 1 5 10 15  
 101 Asn Asn Gly Gln Leu Lys Pro Lys Gly Asn Lys Ala Glu Val Ala Ile  
 102 20 25 30  
 104 Arg Tyr Asp Gly Lys Phe Lys Tyr Asp Gly Lys Ala Thr His Gly Pro  
 105 35 40 45  
 107 Ser Val Lys Asn Ala Val Tyr Ala His Gln Ile Glu Thr Gly Leu Tyr  
 108 50 55 60  
 110 Asp Gly Cys Tyr Ile Ser Thr Thr Asp Lys Glu Ile Ala Lys Lys  
 111 65 70 75 80  
 113 Phe Ala Thr Ser Ser Gly Ile Glu Asn Gly Tyr Ile Tyr Val Leu Asn  
 114 85 90 95  
 116 Arg Asp Leu Phe Gly Gln Tyr Ser Ile Phe Glu Tyr Glu Val Asp His  
 117 100 105 110  
 119 Pro Glu Asn Pro Asn Glu Lys Glu Val Thr Ile Arg Ala Glu Asp Cys  
 120 115 120 125  
 122 Gly Cys Ile Pro Glu Glu Val Ile Ile Ala Lys Glu Leu Ile Glu Ile  
 123 130 135 140  
 125 Asn  
 126 145  
 129 <210> SEQ ID NO: 4  
 130 <211> LENGTH: 145  
 131 <212> TYPE: PRT  
 132 <213> ORGANISM: Neisseria meningitidis  
 134 <400> SEQUENCE: 4  
 135 Met Gly Asn Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp Glu Gln

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/526,125

DATE: 08/14/2006

TIME: 15:41:59

Input Set : N:\AMC\Sequence listing.txt

Output Set: N:\CRF4\08142006\J526125.raw

136 1	5	10	15
138 Asn Asn Gly Gln Leu Lys Pro Lys Gly Asn Lys Ala Glu Val Ala Ile			
139	20	25	30
141 Arg Tyr Asp Gly Lys Phe Lys Tyr Asp Gly Lys Ala Thr His Gly Pro			
142	35	40	45
144 Ser Val Lys Asn Ala Val Tyr Ala His Gln Ile Glu Thr Gly Leu Tyr			
145	50	55	60
147 Asp Gly Cys Tyr Ile Ser Thr Thr Asp Lys Glu Ile Ala Lys Lys			
148 65	70	75	80
150 Phe Ala Thr Ser Ser Gly Ile Glu Asn Gly Tyr Ile Tyr Val Leu Asn			
151	85	90	95
153 Arg Asp Leu Phe Gly Gln Tyr Ser Ile Phe Glu Tyr Glu Val Glu His			
154	100	105	110
156 Pro Glu Asn Pro Asn Glu Lys Asp Val Thr Ile Arg Ala Glu Asp Cys			
157	115	120	125
159 Gly Cys Ile Pro Glu Glu Val Ile Ile Ala Lys Glu Leu Ile Glu Ile			
160	130	135	140
162 Asn			
163 145			
166 <210> SEQ ID NO: 5			
167 <211> LENGTH: 14			
168 <212> TYPE: PRT			
169 <213> ORGANISM: Neisseria meningitidis, serogroup B			
171 <400> SEQUENCE: 5			
172 Phe Leu Ala Lys Leu Leu Lys Asp Phe Arg Arg Ile Thr Leu			
173 1	5	10	
175 <210> SEQ ID NO: 6			
176 <211> LENGTH: 600			
177 <212> TYPE: DNA			
178 <213> ORGANISM: Neisseria meningitidis, serogroup B			
180 <400> SEQUENCE: 6			
181 tattcttggc gaagctgttg aaagacttcc gccgcattac cttataaaat aaaacatccc			60
182 tctcaagcag tctgataatg tttggattgc ttgagattga tgagtaatgg tggtaaattc			120
183 aacctttaaa ttaataactt atggaaatt tcttatatacg aggatttagt tgccaacaag			180
184 atgagcaaaa taatggacag ttaaaaccta aaggtataa agctgaagtt gcaattcggt			240
185 atgatggtaa gtttaaatat gatggtaaag ctacacatgg tccaagtgtg aagaatgcag			300
186 ttacgccccca tcaaattgaa acaggtctat atgacggatg ttatatatct acgacaacag			360
187 acaaggaaat tgccaagaaa tttgcaacaa gttccggcat cggaaatggc tatatatatg			420
188 ttttaaatag ggatttgtt ggtcaatatt ctatTTGA atatgaggTTT gaacatccag			480
189 aaaacccaaa tgagaaggaa gtaacaatca gagctgaaga ttgtggctgt attcctgaag			540
190 aagtgattat tgctaaagag ttgatagaaaa ttaactaagt tgaaagggtca atataatggc			600
192 <210> SEQ ID NO: 7			
193 <211> LENGTH: 180			
194 <212> TYPE: DNA			
195 <213> ORGANISM: Neisseria meningitidis, serogroup A			
197 <400> SEQUENCE: 7			
198 tattccttggc caacctgttg aaagacttcc gccgcattac tctgtatcc gagcatttc			60
199 agacggcctg aataaaaagg ccgtctgaaa aaagaagtcc gaacatcatt cagaaagatt			120
200 agacatgagc ttagttgaat tgaaagtgcc cgacattggc ggtcacgaaa atgttagat			180

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/526,125

DATE: 08/14/2006

TIME: 15:41:59

Input Set : N:\AMC\Sequence listing.txt  
 Output Set: N:\CRF4\08142006\J526125.raw

202 <210> SEQ ID NO: 8  
 203 <211> LENGTH: 14  
 204 <212> TYPE: PRT  
 205 <213> ORGANISM: Neisseria meningitidis, serogroup A  
 207 <400> SEQUENCE: 8  
 208 Phe Leu Ala Asn Leu Leu Lys Asp Phe Arg Arg Ile Thr Leu  
 209 1 5 10  
 211 <210> SEQ ID NO: 9  
 212 <211> LENGTH: 19  
 213 <212> TYPE: PRT  
 214 <213> ORGANISM: Neisseria meningitidis, serogroup A  
 216 <400> SEQUENCE: 9  
 217 Met Ser Leu Val Glu Leu Lys Val Pro Asp Ile Gly Gly His Glu Asn  
 218 1 5 10 15  
 220 Val Asp Ile  
 224 <210> SEQ ID NO: 10  
 225 <211> LENGTH: 180  
 226 <212> TYPE: DNA  
 227 <213> ORGANISM: Neisseria gonorrhoeae  
 229 <400> SEQUENCE: 10  
 230 tattcctggc gaacctgttg aaagacttcc gccgcattac cttataaaat aaaacatccc 60  
 231 tc当地caaggcag tctgataatg ttggattgc ttgagattga tgagtatgg tgttaaattc 120  
 232 aaactttaaaa ttaataactt atggaaatt tcttatttat atagaggcat tagttgccaa 180  
 234 <210> SEQ ID NO: 11  
 235 <211> LENGTH: 14  
 236 <212> TYPE: PRT  
 237 <213> ORGANISM: Neisseria gonorrhoeae  
 239 <400> SEQUENCE: 11  
 240 Phe Leu Ala Asn Leu Leu Lys Asp Phe Arg Arg Ile Thr Leu  
 241 1 5 10  
 243 <210> SEQ ID NO: 12  
 244 <211> LENGTH: 7  
 245 <212> TYPE: PRT  
 246 <213> ORGANISM: Neisseria gonorrhoeae  
 248 <400> SEQUENCE: 12  
 249 Met Gly Asn Phe Leu Phe Ile  
 250 1 5  
 252 <210> SEQ ID NO: 13  
 253 <211> LENGTH: 147  
 254 <212> TYPE: PRT  
 255 <213> ORGANISM: Vibrio cholerae  
 257 <400> SEQUENCE: 13  
 258 Lys Leu Tyr Arg Ala Asp Ser Arg Pro Pro Asp Glu Ile Lys Gln Ser  
 259 1 5 10 15  
 261 Gly Gly Leu Met Pro Arg Gly Gln Ser Glu Tyr Phe Asp Arg Gly Thr  
 262 20 25 30  
 264 Gln Met Asn Ile Asn Leu Tyr Asp His Ala Arg Gly Thr Gln Thr Gly  
 265 35 40 45  
 267 Phe Val Arg His Asp Asp Gly Tyr Val Ser Thr Ser Ile Ser Leu Arg

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/526,125

DATE: 08/14/2006

TIME: 15:41:59

Input Set : N:\AMC\Sequence listing.txt

Output Set: N:\CRF4\08142006\J526125.raw

268       50                       55                       60  
270 Ser Ala His Leu Val Gly Gln Thr Ile Leu Ser Gly His Ser Thr Tyr  
271 65                       70                       75                       80  
273 Tyr Ile Tyr Val Ile Ala Thr Ala Pro Asn Met Phe Asn Val Asn Asp  
274                       85                       90                       95  
276 Val Leu Gly Ala Tyr Ser Pro His Pro Asp Glu Gln Glu Val Ser Ala  
277                       100                       105                       110  
279 Leu Gly Gly Ile Pro Tyr Ser Gln Ile Tyr Gly Trp Tyr Arg Val His  
280                       115                       120                       125  
282 Phe Gly Val Leu Asp Glu Gln Leu His Arg Asn Arg Gly Tyr Arg Asp  
283                       130                       135                       140  
285 Arg Tyr Tyr  
286 145

**VERIFICATION SUMMARY** DATE: 08/14/2006  
PATENT APPLICATION: US/10/526,125 TIME: 15:42:00

Input Set : N:\AMC\Sequence listing.txt  
Output Set: N:\CRF4\08142006\J526125.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No  
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date

## **Raw Sequence Listing before editing (for reference only)**



IFWP

*delete  
duplicate  
<110's*

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/526,125

DATE: 08/09/2006  
TIME: 09:34:27

Input Set : F:\Sequence listing.txt  
Output Set: N:\CRF4\08092006\J526125.raw

B <110> APPLICANT: CHIRON SRL  
 W--> 4 <110> APPLICANT: PIZZA Mariagrazia  
 W--> 5 <110> APPLICANT: MASIGNANI Vega  
 7 <120> TITLE OF INVENTION: MUTANT FORMS OF MENINGOCOCCAL ADP-RIBOSYLATING TOXIN  
 9 <130> FILE REFERENCE: P031668WO / PP19813.002  
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/526,125  
 C--> 11 <141> CURRENT FILING DATE: 2005-02-28  
 11 <150> PRIOR APPLICATION NUMBER: GB-0220205.9  
 12 <151> PRIOR FILING DATE: 2002-08-30  
 14 <160> NUMBER OF SEQ ID NOS: 13  
 16 <170> SOFTWARE: SeqWin99, version 1.02  
 18 <210> SEQ ID NO: 1  
 19 <211> LENGTH: 145  
 20 <212> TYPE: PRT  
 21 <213> ORGANISM: Neisseria meningitidis  
 23 <400> SEQUENCE: 1  
 24 Met Gly Asn Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp Glu Gln  
 25 1 5 10 15  
 27 Asn Asn Gly Gln Leu Lys Pro Lys Gly Asn Lys Ala Glu Val Ala Ile  
 28 20 25 30  
 30 Arg Tyr Asp Gly Lys Phe Lys Tyr Asp Gly Lys Ala Thr His Gly Pro  
 31 35 40 45  
 33 Ser Val Lys Asn Ala Val Tyr Ala His Gln Ile Glu Thr Gly Leu Tyr  
 34 50 55 60  
 36 Asp Gly Cys Tyr Ile Ser Thr Thr Asp Lys Glu Ile Ala Lys Lys  
 37 65 70 75 80  
 39 Phe Ala Thr Ser Ser Gly Ile Glu Asn Gly Tyr Ile Tyr Val Leu Asn  
 40 85 90 95  
 42 Arg Asp Leu Phe Gly Gln Tyr Ser Ile Phe Glu Tyr Glu Val Glu His  
 43 100 105 110  
 45 Pro Glu Asn Pro Asn Glu Lys Glu Val Thr Ile Arg Ala Glu Asp Cys  
 46 115 120 125  
 48 Gly Cys Ile Pro Glu Glu Val Ile Ile Ala Lys Glu Leu Ile Glu Ile  
 49 130 135 140  
 51 Asn  
 52 145  
 55 <210> SEQ ID NO: 2  
 56 <211> LENGTH: 145  
 57 <212> TYPE: PRT  
 58 <213> ORGANISM: Neisseria meningitidis  
 60 <400> SEQUENCE: 2  
 61 Met Gly Asn Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp Glu Gln  
 62 1 5 10 15

*Does Not Comply  
Corrected Diskette Needed*

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/526,125

DATE: 08/09/2006  
TIME: 09:34:27

Input Set : F:\Sequence listing.txt  
Output Set: N:\CRF4\08092006\J526125.raw

64 Asn Asn Gly Gln Leu Lys Pro Lys Gly Asn Lys Ala Glu Val Ala Ile  
65 20 25 30  
67 Arg Tyr Asp Gly Lys Phe Lys Tyr Asp Gly Lys Ala Thr His Gly Pro  
68 35 40 45  
70 Ser Val Lys Asn Ala Val Tyr Ala His Gln Ile Glu Thr Gly Leu Tyr  
71 50 55 60  
73 Asp Gly Cys Tyr Ile Ser Thr Thr Asp Lys Glu Ile Ala Lys Lys  
74 65 70 75 80  
76 Phe Ala Thr Ser Ser Gly Ile Glu Asn Gly Tyr Ile Tyr Val Leu Asn  
77 85 90 95  
79 Arg Asp Leu Phe Gly Gln Tyr Ser Ile Phe Glu Tyr Asp Val Glu His  
80 100 105 110  
82 Pro Glu Asn Pro Asn Glu Lys Glu Val Thr Ile Arg Ala Glu Asp Cys  
83 115 120 125  
85 Gly Cys Ile Pro Glu Glu Val Ile Ile Ala Lys Glu Leu Ile Glu Ile  
86 130 135 140  
88 Asn  
89 145  
92 <210> SEQ ID NO: 3  
93 <211> LENGTH: 145  
94 <212> TYPE: PRT  
95 <213> ORGANISM: Neisseria meningitidis  
97 <400> SEQUENCE: 3  
98 Met Gly Asn Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp Glu Gln  
99 1 5 10 15  
101 Asn Asn Gly Gln Leu Lys Pro Lys Gly Asn Lys Ala Glu Val Ala Ile  
102 20 25 30  
104 Arg Tyr Asp Gly Lys Phe Lys Tyr Asp Gly Lys Ala Thr His Gly Pro  
105 35 40 45  
107 Ser Val Lys Asn Ala Val Tyr Ala His Gln Ile Glu Thr Gly Leu Tyr  
108 50 55 60  
110 Asp Gly Cys Tyr Ile Ser Thr Thr Asp Lys Glu Ile Ala Lys Lys  
111 65 70 75 80  
113 Phe Ala Thr Ser Ser Gly Ile Glu Asn Gly Tyr Ile Tyr Val Leu Asn  
114 85 90 95  
116 Arg Asp Leu Phe Gly Gln Tyr Ser Ile Phe Glu Tyr Glu Val Asp His  
117 100 105 110  
119 Pro Glu Asn Pro Asn Glu Lys Glu Val Thr Ile Arg Ala Glu Asp Cys  
120 115 120 125  
122 Gly Cys Ile Pro Glu Glu Val Ile Ile Ala Lys Glu Leu Ile Glu Ile  
123 130 135 140  
125 Asn  
126 145  
129 <210> SEQ ID NO: 4  
130 <211> LENGTH: 145  
131 <212> TYPE: PRT  
132 <213> ORGANISM: Neisseria meningitidis  
134 <400> SEQUENCE: 4  
135 Met Gly Asn Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp Glu Gln

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/526,125

DATE: 08/09/2006

TIME: 09:34:27

Input Set : F:\Sequence listing.txt

Output Set: N:\CRF4\08092006\J526125.raw

136 1	5	10	15
138 Asn Asn Gly Gln Leu Lys Pro Lys Gly Asn Lys Ala Glu Val Ala Ile			
139	20	25	30
141 Arg Tyr Asp Gly Lys Phe Lys Tyr Asp Gly Lys Ala Thr His Gly Pro			
142	35	40	45
144 Ser Val Lys Asn Ala Val Tyr Ala His Gln Ile Glu Thr Gly Leu Tyr			
145	50	55	60
147 Asp Gly Cys Tyr Ile Ser Thr Thr Asp Lys Glu Ile Ala Lys Lys			
148 65	70	75	80
150 Phe Ala Thr Ser Ser Gly Ile Glu Asn Gly Tyr Ile Tyr Val Leu Asn			
151	85	90	95
153 Arg Asp Leu Phe Gly Gln Tyr Ser Ile Phe Glu Tyr Glu Val Glu His			
154	100	105	110
156 Pro Glu Asn Pro Asn Glu Lys Asp Val Thr Ile Arg Ala Glu Asp Cys			
157	115	120	125
159 Gly Cys Ile Pro Glu Glu Val Ile Ile Ala Lys Glu Leu Ile Glu Ile			
160 130	135	140	
162 Asn			
163 145			
166 <210> SEQ ID NO: 5			
167 <211> LENGTH: 14			
168 <212> TYPE: PRT			
169 <213> ORGANISM: Neisseria meningitidis, serogroup B			
171 <400> SEQUENCE: 5			
172 Phe Leu Ala Lys Leu Leu Lys Asp Phe Arg Arg Ile Thr Leu			
173 1	5	10	
175 <210> SEQ ID NO: 6			
176 <211> LENGTH: 600			
177 <212> TYPE: DNA			
178 <213> ORGANISM: Neisseria meningitidis, serogroup B			
180 <400> SEQUENCE: 6			
181 tattctggc gaagctgttg aaagacttcc gcccattac cttataaaat aaaacatccc		60	
182 tctcaaggcg tctgataatg ttggattgc tttagattga tgtagaatgg tgttaattc		120	
183 aacctttaaa ttaataactt atggaaatt tcttatatacg aggattttg tgccaacaag		180	
184 atgagcaaaa taatggacag taaaaccta aaggtataa agctgaagtt gcaattcggt		240	
185 atgatggtaa gtttaatatgatggtaaag ctacacatgg tccaagtgtg aagaatgcag		300	
186 ttacgccccca tcaaattgaa acaggcttat atgacggatg ttatataatct acgacaacag		360	
187 acaaggaaat tgccaagaaa ttgcaacaa gttccggcat cgaaaatggc tatataatgt		420	
188 tttaaatag ggattttttt ggtcaatatt ctattttga atatggatggt gaacatccag		480	
189 aaaacccaaa tgagaaggaa gtaacaatca gagctgaaga ttgtggctgt attcctgaag		540	
190 aagtgattat tgctaaagag ttgatagaaa ttaactaagt tgaaaggctca atataatggc		600	
192 <210> SEQ ID NO: 7			
193 <211> LENGTH: 180			
194 <212> TYPE: DNA			
195 <213> ORGANISM: Neisseria meningitidis, serogroup A			
197 <400> SEQUENCE: 7			
198 tattctggc caacctgttg aaagacttcc gcccattac tctgtaatcc gagcatttc		60	
199 agacggcctgt aataaaaagg ccgtctgaaa aaagaagtcc gaacatcatt cagaaagatt		120	
200 agacatgagc ttagtgaat tgaaagtgcc cgacattggc ggtcacgaaa atgttagat		180	

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/526,125

DATE: 08/09/2006

TIME: 09:34:27

Input Set : F:\Sequence listing.txt  
 Output Set: N:\CRF4\08092006\J526125.raw

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202 <210> SEQ ID NO: 8
203 <211> LENGTH: 14
204 <212> TYPE: PRT
205 <213> ORGANISM: Neisseria meningitidis, serogroup A
207 <400> SEQUENCE: 8
208 Phe Leu Ala Asn Leu Leu Lys Asp Phe Arg Arg Ile Thr Leu
209 1 5 10
211 <210> SEQ ID NO: 9
212 <211> LENGTH: 19
213 <212> TYPE: PRT
214 <213> ORGANISM: Neisseria meningitidis, serogroup A
216 <400> SEQUENCE: 9
217 Met Ser Leu Val Glu Leu Lys Val Pro Asp Ile Gly Gly His Glu Asn
218 1 5 10 15
220 Val Asp Ile
224 <210> SEQ ID NO: 10
225 <211> LENGTH: 180
226 <212> TYPE: DNA
227 <213> ORGANISM: Neisseria gonorrhoeae
229 <400> SEQUENCE: 10
230 tattcctggc gaacctgttg aaagacttcc gcccattac cttataaaat aaaacatccc 60
231 tctcaaggcag tctgataatg tttggattgc ttgagattga tgagtgtatgg tggtaatttc 120
232 aaactttaaa ttaataactt atggaaatt tcttatttat atagaggcat tagtgccaa 180
234 <210> SEQ ID NO: 11
235 <211> LENGTH: 14
236 <212> TYPE: PRT
237 <213> ORGANISM: Neisseria gonorrhoeae
239 <400> SEQUENCE: 11
240 Phe Leu Ala Asn Leu Leu Lys Asp Phe Arg Arg Ile Thr Leu
241 1 5 10
243 <210> SEQ ID NO: 12
244 <211> LENGTH: 7
245 <212> TYPE: PRT
246 <213> ORGANISM: Neisseria gonorrhoeae
248 <400> SEQUENCE: 12
249 Met Gly Asn Phe Leu Phe Ile
250 1 5
252 <210> SEQ ID NO: 13
253 <211> LENGTH: 147
254 <212> TYPE: PRT
255 <213> ORGANISM: Vibrio cholerae
257 <400> SEQUENCE: 13
258 Lys Leu Tyr Arg Ala Asp Ser Arg Pro Pro Asp Glu Ile Lys Gln Ser
259 1 5 10 15
261 Gly Gly Leu Met Pro Arg Gly Gln Ser Glu Tyr Phe Asp Arg Gly Thr
262 20 25 30
264 Gln Met Asn Ile Asn Leu Tyr Asp His Ala Arg Gly Thr Gln Thr Gly
265 35 40 45
267 Phe Val Arg His Asp Asp Gly Tyr Val Ser Thr Ser Ile Ser Leu Arg

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/526,125

DATE: 08/09/2006

TIME: 09:34:27

Input Set : F:\Sequence listing.txt

Output Set: N:\CRF4\08092006\J526125.raw

268	50	55	60	
270	Ser Ala His Leu Val Gly Gln Thr Ile Leu Ser Gly His Ser Thr Tyr			
271	65	70	75	80
273	Tyr Ile Tyr Val Ile Ala Thr Ala Pro Asn Met Phe Asn Val Asn Asp			
274	85	90	95	
276	Val Leu Gly Ala Tyr Ser Pro His Pro Asp Glu Gln Glu Val Ser Ala			
277	100	105	110	
279	Leu Gly Gly Ile Pro Tyr Ser Gln Ile Tyr Gly Trp Tyr Arg Val His			
280	115	120	125	
282	Phe Gly Val Leu Asp Glu Gln Leu His Arg Asn Arg Gly Tyr Arg Asp			
283	130	135	140	
285	Arg Tyr Tyr			
286	145			

**VERIFICATION SUMMARY** DATE: 08/09/2006  
PATENT APPLICATION: US/10/526,125 TIME: 09:34:28

Input Set : F:\Sequence listing.txt  
Output Set: N:\CRF4\08092006\J526125.raw

L:4 M:280 W: Numeric Identifier already exists, <110> found multiple times  
L:5 M:280 W: Numeric Identifier already exists, <110> found multiple times  
L:11 M:270 C: Current Application Number differs, Replaced Current Application No  
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date